

I have conferred on it the name of the Rev. A. E. Eaton, by whom the Algerian species was discovered.

Eatonia plumifera, Birula, and *E. scopulifera*, Cambr., may be thus distinguished:—

Body slightly broader in front than behind; nasal prominence furnished with but few spiniform hairs; rostrum devoid of terminal spine *E. plumifera*.

Body heart-shaped, much broadest in front; nasal prominence furnished with numerous long spiniform hairs of different lengths; rostrum armed with a long terminal, sharp-pointed, spiny process *E. scopulifera*.

EXPLANATION OF PLATE LV.

Fig. 1. *Eatonia scopulifera*, sp. n., greatly enlarged.

2. Ditto, in profile, less enlarged.

3. Ditto, front view.

These two figures (2 & 3) show the mode in which the posterior legs are carried.

4. Underside of caput, greatly enlarged, showing genital aperture, mouth-parts, and palpi.

5. Upperside of caput, showing eyes, nasiform process, and palpi.

4. On some Collections of Corals of the Family *Pocilloporidæ* from the S.W. Pacific Ocean. By J. STANLEY GARDINER, B.A., Gonville and Caius College, Cambridge¹.

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(Plates LVI. & LVII.)

The corals described were collected by the author in 1896-7 at Funafuti, Rotuma, and Fiji, and by Dr. A. Willey at Lifu, Loyalty Islands. I am indebted to Mr. Adam Sedgwick, F.R.S., for entrusting the latter collection to me and for his kindly interest; my thanks are also due to the authorities of the British Museum for allowing me free access to their types and to the 'Challenger' specimens.

The species represented in these collections are 21, viz. 20 *Pocillopora* and 1 *Seriatopora*. Of the former 5 are new, and it has been necessary to redescribe 4 old species. The comparison of the collection with specimens in the British Museum has shown me that several species of Verrill, Dana, and others are not really distinct and must be combined with other species.

¹ Communicated by Mr. W. BATESON, F.R.S., F.Z.S.

Family POCILLOPORIDÆ.

I. Genus POCILLOPORA, Lamarck.

Pocillopora, Lamarck, Hist. Anim. sans Vert. ii. p. 273.

Pocillopora, Duncan, Rev. Madrep., Jour. Linn. Soc., Zool. vol. xviii. p. 47.

The classificatory characters of the species in this genus by means of the corallum are extremely unsatisfactory. In the collections there are over 50 specimens, either whole colonies or branches from different colonies, and in addition I have examined a very large number of specimens in the British Museum. These show an almost complete series from *P. acuta* to *P. madreporacea*; and any division into subgenera does not seem to me to be admissible, nor do there appear to be any characters running through a limited number of species which will serve to divide up the genus in any way for classificatory purposes. The examination of the polyps in such widely separated species as *P. suffruticosa*, *P. favosa*, and *P. grandis* has failed to show me any differences in their macroscopic anatomy; and I am doubtful whether all these so-called species should not rather be described as varieties of one species, the characters of which would be the characters of the whole genus.

The growth of the colony is much more vigorous toward the summits of the branches, and to this is due the angular character of the calices here and their very thin walls. The complete absence of verrucæ on the tops of the branches and their incrassate form in such a species as *P. grandis* are due to the ends of the branches having reached the low-tide level, and, being unable to grow further upwards, increasing in both thickness and breadth. Although this is by far the most common species of Madreporaria on the reef at Funafuti, I never found any of its branches with their summits dead, even though they reach almost invariably to the low-tide level. The colonies exhibit generally a very marked growth towards the light, and the under surfaces of horizontally growing branches of clumps are often completely bare of verrucæ. The living colonies are usually green or pink when the polyps are expanded, but if retracted are nearly colourless.

1. POCILLOPORA PAUCISTELLATA, Quelch.

Pocillopora paucistellata, Quelch, Challenger Report on Reef-Corals, p. 65, pl. i. figs. 3-3 a.

A few small pieces were dredged which agree well with Quelch's description. The corallum is rather more delicate and branched than the type. The calices are surrounded by short spines, and the primary septa are visible as spinulous projections in some of the subterminal corallites.

Funafuti; 5 and 7 fathoms.

2. *POCILLOPORA SUFFRUTICOSA*, Verrill.

Pocillopora suffruticosa, Verrill, Bull. Mus. Comp. Zool. Cambridge, U.S.A., vol. i. p. 60.

Pocillopora suffruticosa, Quelch, Challenger Report on Reef-Corals, p. 65.

Four low clumps 5-7 cms. high were obtained, which agree well with Verrill's description and the 'Challenger' specimen referred to this species by Quelch. The calices vary from .5-1 mm. in diameter; primary septa usually distinct spinulous lamellæ in the calices of the terminal branchlets. Columella low but quite distinct and spinulous. Colour of the living colony usually pink.

Funafuti; outer reef and 7-20 fathoms.

The ends of the branches of this species are much galled by a species of *Harpalocarcinus*.

3. *POCILLOPORA CESPITOSA*, Dana.

Pocillopora cespitosa, Dana, Zoophytes, p. 525, pl. 49. fig. 5.

A small specimen was obtained which corresponds very closely with Dana's figure and description.

Wakaya, Fiji; outer reef.

4. *POCILLOPORA SEPTATA*, n. sp. (Plate LVI. figs. 5, 5a.)

I have been obliged to refer a small horizontally growing branch, about 6 cms. long, to a new species. The colony probably forms rather loose hemispherical clumps, arising from an incrusting base with branches dichotomizing very regularly about every 15-20 mms. and about 12 mms. in diameter, 5 cms. below the apices, which are generally very blunt. The upper surface of the type is covered with low rounded verrucæ about 2 mms. in height and diameter, formed by 6-8 cells, nearly their own diameter distant from one another. The terminal calices are thin-walled, without septa or columella, and show clearly the formation of the tabulæ; the calices of the verrucæ are round, about 1 mm. in diameter, but between the verrucæ they are seldom more than .6 mm. The cœnenchyma is everywhere well developed, and is about .4 mm. thick between the calices of the upper surface of the branch, and about 1 mm. between those of the underside; it is covered everywhere very evenly by low pointed unbranched spines, which on the cell-walls of the verrucæ may form regular striations. The primary and secondary septa are exceedingly well developed, thick and bluntly spinulous in the calices of the verrucæ, but in the calices of the branch are less developed. The calices generally are shallow, being much filled up below by stereoplasm; not only the directives, but often the whole of the primaries fuse below with the columella. The latter is small, round, somewhat rough but exceedingly prominent, in the calices between the verrucæ often projecting slightly above their margins.

Funafuti; 30 fathoms.

5. *POCILLOPORA DAMICORNIS*, Esper.

Madrepora damicornis, Esper, Pflanz. Forts. i. p. 43; Madrep. pl. xlv. A.

Pocillopora damicornis, Quelch, Challenger Report on Reef-Corals, p. 66.

A small clump and a large number of fragments were obtained, which correspond closely to Esper's description and to the 'Challenger' specimen. The lower branches in the clump tend to anastomose freely. The columella varies from a large oval to a round low projection, covered with short blunt spines.

Rotuma; outer reef.

6. *POCILLOPORA BREVICORNIS*, Lamarck.

Pocillopora brevicornis, Lamarck, Hist. Anim. sans Vert. ii. p. 275.

Pocillopora brevicornis, Dana, Zoophytes, p. 526, pl. 49. fig. 8.

There are three low rounded clumps of this species 5-7 cms. high, and almost flat-topped. A Loyalty Islands specimen differs from the type in having shorter and rounded verrucæ. Delicate spinulous striations can be distinguished in most of the calices of the verrucæ, and represent the septa.

Funafuti; outer reef. Lifu, Loyalty Islands.

7. *POCILLOPORA PULCHELLA*, Brüggemann.

Pocillopora pulchella, Brüggemann, Journ. Mus. Godeffroy, Bd. iii. p. 203.

A single branch was obtained, which resembles very closely in all respects the type specimen of this species in the British Museum.

Rotuma; outer reef.

8. *POCILLOPORA LOBIFERA*, Milne-Edwards & Haime.

Pocillopora lobifera, Milne-Edwards & Haime, Corall. iii. p. 304.

There are two specimens, which seem to represent the species thus named by Milne-Edwards and Haime. Corallum closely resembles that of *P. brevicornis* in its mode of growth, consisting of much crowded branches little enlarged or divided towards their summits, which are covered over by small narrow verrucæ, generally less than 2 mms. high: the verrucæ on the sides of the branches lower down are often much longer, but retain almost the same diameter. The calices of the ends of the branches are very small .5-7 mm. in diameter, angular and relatively very deep; on the verrucæ they are larger but seldom exceed .9 mm. in diameter. The cœnenchyma between the corallites nowhere exceeds the half of their diameter in breadth; its surface is covered somewhat sparsely with low spines, which tend to form striations between the calices. Septa and columella can seldom be distinguished.

The stereoplasm is well developed in the cells, causing the corallum to be very dense and heavy.

Rotuma ; outer reef.

The one specimen shows a fusion between the branches 3.5 cms. below their summits, the branches arising from this being roughly circular, 8-12 mms. in diameter. The other specimen, which is only about 3 cms. high, seems to represent a young colony, the growth of which has been checked by the apices of its branches reaching the low-tide level of the pit in the reef in which it probably grew, as they are somewhat flattened, and the lateral verrucæ are much elongated.

9. POCILLOPORA LACERA, Verrill.

Pocillopora lacera, Verrill, Proc. Essex Inst. vol. vi. p. 100.

A clump about 9 cms. in diameter by 5 cms. high was obtained, which agrees closely with Verrill's short description. The verrucæ are few, narrow and elongate, and pass gradually into the branchlets, which are from 5-10 mms. long. Lateral calices round and shallow, 7 mm. in diameter, distant about half their diameter from one another; terminal calices 1 mm. in diameter, somewhat angular in shape, thin-walled and deep. Septa 12 thin spiniform lamellæ; columella a large round low spinulous projection. Corallum dense; cœnenchyma covered with low, somewhat branched spines, which form distinct striations between the calices.

Rotuma ; outer reef.

10. POCILLOPORA CLAVARIA (Ehrenberg). (Plate LVII. fig. 1.)

Pocillopora clavaria, Ehrenberg, Die Corallenthiere des Rothen Meeres, p. 128.

I have referred a small clump 11 cms. in diameter by 5 cms. high to this species. The colony consists of rather short branches, which dichotomize regularly, and arise from a broad incrusting base; the branches, where they are given off, are about 13 mms. in diameter, and are somewhat incrassate at their apices. The branches are covered with very obtuse verrucæ about 3 mms. broad at their bases by about 2.5 mms. high; on the sides of the branches they are much appressed. In places between the terminal verrucæ of the branches the calices are angular and thin-walled, but on the verrucæ they are round, about 1 mm. in diameter, and relatively thick-walled, the cœnenchyma being generally well developed and granular. The septa are very variable, in some calices being indistinguishable, but in others represented by spinulous lamellæ; the two directive septa cannot generally be identified. Columella small, distinct, and spinulous.

Fuuafuti ; outer reef.

11. POCILLOPORA OBTUSATA, n. sp. (Plate LVI. fig. 2.)

Corallum forming a low, broadly hemispherical mass, consisting

of short subequal, much branched stems, not more than 6 mms. apart, 7–15 mms. thick, rather compressed and lobed at the apices. The branches are covered over their summits with extremely obtuse and rounded verrucæ, many 5–6 mms. high and 4–5 mms. in diameter at their base; the verrucæ on the sides of the branches are scanty and somewhat appressed. The calices are everywhere from .8–1 mm. in diameter and fairly round; they are generally surrounded by a distinct ring of somewhat flattened spines. The primary and secondary septa in many calices are distinct, rather thin, spiniform lamellæ; they are prolonged inwards and seem to fuse below with the columella, which is generally a distinct, low, broad, granular projection. The cœnenchyma is exceedingly well developed, even between the calices of the verrucæ, in which position it is marked by a distinct groove between the cells. The corallum is very dense, the stereoplasm completely filling up the cells below.

Sandal Bay, Lifu, Loyalty Islands.

The specimen is a clump 8 cms. in diameter by 4 cms. high; with it is growing a colony of *Madrepora violacea*, the increase of which has killed a part of its clump. The nearest ally to this species seems to be *P. clavaria*, but its characters are such as to separate it very distinctly from all previously described species.

12. POCILLOPORA FAVOSA (Ehrenberg). (Plate LVI. fig. 3.)

Pocillopora favosa, Ehrenberg, Die Corallenthiere des Rothen Meeres, p. 127.

I have referred to this species after considerable hesitation several specimens, which agree fairly well with Ehrenberg's short description. The corallum forms clumps of much divided branches, which are generally more or less round, but may be slightly compressed and lobed towards their apices; diameter of the branch 10 cms. below the apex about 1.5 cms., 5 cms. below the apex about 1.1 cms. Apices of the branches usually about 1.1 cms. in breadth by .7 cm. in width, completely covered with verrucæ, which here and immediately below are from 2–3 mms. high by 1–2 mms. broad, and contain from 6–9 calices. The verrucæ lower down on the branches get progressively lower, broader, and more obtuse, until on the main stems they form low projections about 1 mm. high by 4 mms. broad. The cells on the verrucæ near the ends of the branches are round or oval in shape, .9–1.1 mms. in diameter; but between the verrucæ they are rather smaller, angular, very thin-walled and deep. The cœnenchyma is progressively more developed from the top to the bottom of the stems, and is covered by rough, compressed spines, which between the calices may form striations. The primary and secondary septa are well developed, especially in the calices of the verrucæ, but do not project far inwards; the primaries are especially thick and bluntly spined, the tertiaries are here and there visible. Columella low and bluntly spined, usually distinctly joined, deep

down in the calice, by one of the directive septa. Corallum usually heavy, the cœnenchyma between the cells and the stereoplasm within being well developed and very dense in the older parts of the colony.

Funafuti; 7 and 8 fathoms.

The colour of the living colony is green. The corallum of the lower stems of the colony is much stained with a dark red-brown pigment on the exterior. The form described by Klunzinger as *P. favosa* seems to me to belong to an entirely distinct species. I have described the species from three large fragments, apparently from the same colony, obtained from 7 fathoms. A clump 9 cms. in diameter by 8 cms. in height was obtained from 8 fathoms; it differs in having the septa rather thinner, the secondary less distinct. The base of the colony has round shallow calices about .9 mm. in diameter.

13. POCILLOPORA ASPERA, Verrill.

Pocillopora aspera, Verrill, Proc. Essex Inst. vol. vi. 1868, p. 93.

Two small specimens correspond closely to Verrill's description of this species. The largest is about 7 cms. long, and is part of a considerable clump. The older branches are strongly compressed and have the summits somewhat bare, while the younger branches have their apices conspicuously verrucose. The verrucæ vary from 2-5 mms. in length by 1-3 mms. in breadth at the base, and arise obliquely, but are little appressed to the branches. The calices of the verrucæ are oval in shape, 1-1.3 mms. in long diameter; their primary and secondary septa are distinct, the directive septa more prominent and extending to a small, distinct, spinulous columella. The calices of the ends of the branches are angular in shape, about 1.1 mms. in diameter, with very thin walls, and are very deep; their septa and columella are not developed. In places at the sides of the branches the calices are very small, not more than .8 mm. in diameter, round in shape and shallow, with distinct septa and columella; the cœnenchyma is well developed between these, and covered with low granular spines. The corallites of the base of the colony resemble the latter, but the cœnenchyma is better developed, and there are a few larger, round calices 1.3 mms. in diameter. The corallum of the base of the colony is stained a dark brown-red colour. The living colony is dark green.

Funafuti; 5 and 30 fathoms.

Var. DANÆ (Verrill).

Pocillopora danæ, Verrill, Bull. Mus. Comp. Zool. p. 59 (1864).

Pocillopora danæ, Verrill, Proc. Essex Inst. vol. vi. 1868, p. 93.

Two specimens correspond very closely to Verrill's description, but there is a third, which seems absolutely intermediate between this "species" and *P. aspera*, so that I have constituted it a variety. The septa and columella can be traced in many of the

upper calices of the branches, and in many of the lower are almost distinct.

Levuka, Fiji; 3 fathoms. Funafuti; 30 fathoms.

Two specimens, weighing 41 and 13 grams, were obtained from the chain of a buoy in Levuka Harbour, which had been cleaned less than 22 months before.

Var. *LIGULATA* (Dana).

Pocillopora ligulata, Dana, Zoophytes, p. 531, pl. 50. fig. 2.

Pocillopora ligulata, Verrill, Proc. Essex Inst. vol. vi. 1868, p. 95.

A small specimen closely resembles this "species" of Dana, but many of its calices are intermediate in their septa to *P. aspera*, and the colony also closely resembles in its growth that species. In some of its cells the tertiary septa can be traced, and in others the septa approach to those of *P. plicata* of Dana.

Funafuti; 7 fathoms.

Although I have only had the opportunity of examining a very limited number of specimens, as I can find no distinctive characters, I have no hesitation in combining *P. aspera*, *P. danæ*, *P. ligulata*, and *P. plicata* under one species with three varieties; I only doubt the propriety of characterizing varieties by their septa and columella, as it seems to me that the term "variety" should be kept in the Madreporaria for colonies the general growth of which differs in some important respect from that of the type.

14. *POCILLOPORA VERRUCOSA* (Ellis & Solander).

Madrepora verrucosa, Ellis & Solander, Zoophytes, p. 172.

Pocillopora verrucosa, Dana, Zoophytes, p. 529, pl. 50. figs. 3-3a.

Pocillopora verrucosa, Quelch, Challenger Report on Reef-Corals, p. 69.

I have referred a somewhat recumbent branch to this species. Its verrucæ are 4-5 mms. long by 2-3 mms. broad, and lie entirely on the upper surface of the branch. The septa are indistinct, but the columella is large and very spinulose.

Rotuma; outer reef.

15. *POCILLOPORA SQUARROSA*, Dana.

Pocillopora squarrosa, Dana, Zoophytes, p. 530, pl. 50. fig. 5.

I have referred three specimens to this species. The corallum forms loose clumps about 30 cms. in diameter by 18 cms. high. The species is well characterized by the low crowded verrucæ, which completely cover over the sides and the somewhat compressed and lobed apices of the branches. The surface of the cœnenchyma, which is fairly abundant, is completely covered over by short somewhat variable spines, and there are in the lower calices of the branches 12 very distinct septa, of which one

directive is often larger and prolonged to join the small, but distinct, columella.

Funafuti; outer reef and 20 fathoms.

This species seems to me to be distinct from *P. verrucosa*, but *P. nobilis* of Verrill will probably have to be merged in it.

16. *POCILLOPORA MÆANDRINA*, Dana.

Pocillopora mæandrina, Dana, Zoophytes, p. 533, pl. 50. figs. 6-6 a.

There are five clumps, the largest 7.5 cms. in diameter by 4 cms. high, which correspond very closely to Dana's description. The branches are much compressed, and have very sinuous summits seldom more than 7 mms. broad, sometimes nearly naked, but generally covered by small verrucæ. The cœnenchyma is very little developed between the calices, and the stereoplasm fills up the cells but little, so that the corallum is noticeably light and cellular. Both the septa and columella are very indistinct.

Funafuti; outer reef.

17. *POCILLOPORA CORONATA*, n. sp. (Plate LVI. figs 4, 4 a.)

Corallum consisting of much flattened branches, which may anastomose with one another. The verrucæ over the tops of the branches are very small, but on the sides are somewhat obtuse, 2-3 mms. broad at the base by 1-3 mms. high, and arise almost at right angles to the stem; they are separated from one another by a distance of 1-3 mms. The summits of the branches are slightly flattened but not thickened, and are covered over and between the low verrucæ with small angular calices .5-8 mm. in diameter, with neither septa nor columella. The calices on the verrucæ and sides of the branches are usually round, and from .8-1.2 mms. in diameter, with a ring of very thick, long, blunt, branched and knobbed spinules round their margins; these spinules between neighbouring calices are very large, much flattened, placed in rows, and to some extent continuous with the septa within. The primary and secondary septa are well developed and very thick, with spinulous edges projecting considerably into the cell. The columella is small but very prominent, round and knobbed. The cœnenchyma is very dense and compact, but nowhere very abundant between the corallites, which are almost completely filled up below by stereoplasm. The base of the corallum is of a dark brown-red colour; the living colony is green.

Rotuma; 3 fathoms.

The specimen is a much-flattened branch 9.5 cms. long, obtained by diving. At its base it is 21 mms. broad by 10 mms. thick. It divides dichotomously, 3 cms. above, into two flat branches, which, however, 1 cm. above have fused with one another for a distance of 2 cms. At its apex the one branch is 3.5 cms. broad by 5 mms. thick, and the other 1.4 cms. broad by 6 mms. thick. The cells on the sides of the branches and on the

verrucae, owing to the crown of spines round them, are very distinct and appear rather deep.

This species is closely allied to *P. plicata* of Dana by its septa and columella, but it is at once distinguished by its mode of growth, numerous verrucae, dense corallum, and large spines.

18. *POCILLOPORA RUGOSA*, n. sp. (Plate LVII. fig. 2.)

Corallum of rather short, very thick, arborescent branches, which tend at their summits to be somewhat lobed and incrassate, about 12 mms. thick by 25-40 mms. broad, with apices sparingly covered with low and small verrucae with very angular, thin-walled cells between. The sides of the branches are sparingly covered by large verrucae, which are always separated by spaces equal to their diameter from one another; they are generally about 5-6 mms. long by 2-3 mms. in diameter at their bases, are somewhat pointed, and stand out almost at right angles to the stems. The surface of the corallum is covered with low blunt spines, which form striations between the calices, which are generally shallow, from .6-·9 mm. in diameter and round. The cœnenchyma is little developed between even the lowest calices. The septa are very indistinct. The columella is slender, and in the lower calices of the colony very prominent. The colony, when first obtained, had a most brilliant dark green colour.

Funafuti; 7 fathoms.

The specimen on which this species is founded is a colony 11 cms. high, arising from an incrusting base. It consists of one large stem 3 cms. in diameter, which has divided dichotomously above. Its nearest allies are *P. grandis* and *P. elegans*, but it is separated from these by its distinct columella and the arrangement of its verrucae.

19. *POCILLOPORA GRANDIS*, Dana.

Pocillopora grandis, Dana, Zoophytes, p. 534, pl. 51. figs. 2-2c.

Pocillopora elongata, Dana, Zoophytes, p. 531, pl. 50. figs. 4-4b.

Pocillopora elegans, Dana, Zoophytes, p. 530, pl. 51. figs. 1-1a.

Pocillopora eydnuxi, Milne-Edwards & Haime, Corall. iii. p. 306, pl. F 4. figs. 1 a-c.

I have referred 13 specimens to this species, the description of which is somewhat vague. The colony is formed of large foliaceous branches, which generally are very compressed, often being 6-8 cms. wide by about 1 cm. thick at their apices; they are often, too, considerably ridged on the sides and lobed. The branches are completely covered over the sides and summits by generally considerably appressed verrucae, about 3 mms. high by 2 mms. in diameter, usually about half their diameter distant from one another; on the sides of the branches a few cms. below the summits they are often larger and globose, and at the base of the colony very small or completely obliterated. The calices of the verrucae are round, about 1 mm. in diameter; on the summits of the branches, and in places between the verrucae, they are about

the same size, very deep, angular, and thin-walled, but generally between the verrucæ and low down in the colony they are round, about .8 mm. in diameter. The cœnenchyma is well developed, and near the base of the colony generally separates the calices by about half their diameter; the surface is covered by low spines, which may form striations between the calices. The stereoplasm is usually little developed. Commonly 12 septa and a small columella can be distinguished, but the primary are often very distinct spiny lamellæ, one directive prolonged to meet a small, prominent columella, or both septa and columella may be indistinct. The living colony is colourless, pink or green.

Funafuti; outer reef. Rotuma; outer reef and 2 fathoms. Lifu, Loyalty Islands.

I have retained the name of *P. grandis* for this species to avoid a synonym, as I have no doubt that it is the same species as Dana described under this name. The colonies grow in the fissures of the outer reef in great abundance, and, where their branches reach and project above low tide, they tend to be thickened, flattened above, and bare. There is a good series between *P. elongata* of Dana and *P. grandis*, and some smaller specimens resemble closely *P. elegans* of Dana, so that I have been compelled to unite these species; in the description of *P. eydouxi* there do not seem to be any characters which would serve to separate it either. The same specimen is often in places very diverse in its growth and in the arrangement of its septa and columella, so that I do not think the differentiation of varieties advisable. I have referred to the same species a small incrusting clump 7 cms. broad by 3 cms. high, found in the breakers at Rotuma; its verrucæ and cells are similar to the type, and it seems to be the much stunted commencement of a colony.

The specimen nearest to *P. elongata* (Plate LVII. fig. 3) is a branch 21 cms. long by 3-4 cms. broad; its septa and columella are very distinct. It was growing out from under the overhanging edge of a fissure in the reef, and has its side towards the rock almost bare of verrucæ, which, however, cover the opposite side very evenly. There are two small branches coming off, which subdivide into numerous smaller branchlets, giving them quite a bushy appearance. Their verrucæ are larger than in the main branch; their calices, however, are of the same size and have a distinct star and columella, but the cœnenchyma between them is generally more developed.

20. POCILLOPORA GLOMERATA, n. sp. (Plate LVI. fig. 1.)

Corallum a low, glomerate, slightly hemispherical, semi-incrusting mass, with a few lobe-like, somewhat compressed branches up to 2 cms. in length, 10-15 mms. thick. The apices and sides of the branches are generally bare, but some are sparingly covered by low, round, much appressed verrucæ. Calices of the verrucæ 1-1.2 mms. in diameter, round and rather deep, of the apices of the branches about .8 mm., usually angular and thin-walled, and

of the base between the branches, where they are very crowded, about .4 mm. Cœnenchyma well developed, the calices at the base of the branches being about their own diameter distant from one another; its surface is sparingly covered with low pointed spines. The stereoplasm is little developed, and the cells can be traced deep into the corallum. Septa 12, of which the primary are more distinct, and meet the broad, low, somewhat rough and spinulous columella.

Funafuti; outer reef.

The larger specimen, on which this species is founded, is about 8 cms. in diameter by 4 cms. high, and is quite distinct from all the other living species; it seems to form a connecting link to *P. madreporacea* of Lamarck, a fossil species from the Miocene formation of Turin.

II. GENUS SERIATOPORA, Lamarck.

Seriatopora, Lamarck, Hist. Anim. sans Vert. ii. p. 282.

Seriatopora, Duncan, Rev. Madrep., Jour. Linn. Soc., Zool. vol. xviii. p. 47.

1. SERIATOPORA PACIFICA, Brüggemann.

Seriatopora pacifica, Brüggemann, Ann. & Mag. Nat. Hist. xix. 1877, p. 418.

A small specimen resembles very closely the type specimen of this species. Its branches are, however, rather more divaricate, probably owing to their greater part having been killed by incrusting nullipores.

Rotuma; boat-channel.

NOTE.

Since this paper was written examples of three more species of *Seriatopora* have come to hand, viz. :—

1. SERIATOPORA LINEATA (Linnæus).

Millepora lineata, Linnæus, Syst. Nat. ed. xii. 1766, p. 1283.

Seriatopora lineata, Klunzinger, Die Korallthiere d. Rot. Meeres, Th. ii. p. 71.

The specimen of this species is a large branch, which appears to have been broken off from a clump, and then to have gone on growing as it lay, supported by its branchlets, on the sea-bottom; the broken end has been covered over by the budding of the corallites round it, and two small branches have grown out, so that the fracture is almost completely obliterated.

Sandal Bay, Lifu, Loyalty Islands; 30-40 fathoms.

2. SERIATOPORA CONFERTA, Quelch.

Seriatopora conferta, Quelch, Challenger Report on Reef-Corals, p. 63, pl. ii. fig. 1.

Funafuti; 20 fathoms. A fragment.

